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BUREAU OF ENTOMOLOGY AND PLANT QUARANTINE

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REPORT OF PINE BEETLE SURVEYS on the WARM SPRINGS INDIAN RESERVATION, OREGON Season of 1943

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REPORT OF PINE BEETLE SURVEYS
on the
WARM SPRINGS INDIAN RESERVATION, OREGON
Season of 1943

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ABSTRACT OF RESULTS

1942 BARK BEETLE INFESTATION (Complete records)

Primary Insect: Western pine beetle in ponderosa pine

Estimated Gross Losses for 1942:

No. of trees	Volume	Average vol. per acre	Percent of stand
56,000	25,000,000 board feet	77 board feet	1.2

Trend: Noticeably higher than 1941

Classification: Light epidemic

Recommendations:

No direct control is necessary. Light selection cutting operation now in progress should reduce losses in units of heaviest infestation

1943 BARK BEETLE INFESTATION (Incomplete records)

Primary Insect: Same as in 1942

Probable trend: Noticeable decrease over 1942 losses

Recommendations:

No direct control needed. Light selection cuttings should be extended to other units.

REPORT OF PINE BEETLE SURVEYS
on the
WARM SPRINGS INDIAN RESERVATION, OREGON
Season of 1943

The 1943 cooperative survey of pine beetle activities on the Warm Springs Indian Reservation was made during the period from October 8 to 13 inclusive by a three-man crew composed of Messrs. Nicholas Welter and Charles Chester of the Indian Service and the writer. A one hundred percent cruise was again made on seven 320-acre check plots and all ponderosa pine trees killed by insects or windthrown since the previous survey were marked and recorded.

This short report summarizes the results of this survey by giving the total losses for 1942 and the expected losses for 1943.

Losses in 1942

As evidenced by the check plot data in table 1, insect-caused losses in 1942 increased markedly over those of 1941. Five of the seven check plots showed very noticeable increases, while the losses on two plots were maintained at nearly the same level as in 1941. The 1942 mortality of ponderosa ine on the check plots averaged 126 board feet per acre or 1.08 percent of the stand.

Estimates of gross insect-caused losses for the reservation as a whole (table 2) indicate that approximately 25 million board feet of ponderosa pine were killed in 1942. This mortality is equal to about 77 board feet per acre or 1.2 percent of the stand.

Probable 1943 Losses

Approximately 70 percent of the expected losses for the year were marked at the time of the recent cruise. Based on these partial surveys, the losses estimated for 1943 (table 1) are 17 percent lower than those of 1942 and the trend of the infestation appears to be definitely downward. Although the nember of trees marked on the Miller Flat and the Metolius Bench plots remains at a rather high level, the estimated total for all plots was lower than that of 1942.

The evaluation of the 1943 losses on the check plots or on the reservation as a whole is complicated by the fact that the full effects of the windstorm, which occurred during the spring, are not as yet evident. It is generally known that large areas of windthrown ponderosa pine serve as breeding grounds for the western pine beetle and that severe losses often follow such storms. Because of the severity and extent of the blowdown on the Warm Springs Reservation, the activity of the western pine beetle in 1944 will be watched with much interest.

It was certainly fortunate that an active logging operation was in progress near He He Butte, the area that was hardest hit during the storm. At the time of our survey, a rather large percentage of the merchantable volume of uprooted pine in the vicinity of this butte had already been salvaged. Forest Supervisor Welter expects to salvage most of the merchantable volume in the hardest hit areas.

The data on windfall losses secured on the check plots do not indicate the extent of this damage because the plots appear to be out of the direct path of the storm. Only two plots showed abnormal losses and one plot had no windfalls. The record of these losses on the check plots is as follows:

Plot Number	Number of 1943 Windthrown Trees
1	7
5	24
6	3
7	1
12	11
14	3
20	0

Recommendations

Because of the decline in the current infestation, no direct control work is needed at this time. During 1944 a careful check should be made to determine the possible increase in the number of insect-killed trees resulting from the 1943 blowdown both on and off the check plots.

Whenever feasible, light selection or sanitation-salvage cuttings should be extended to other areas on this reservation.

Table 1: Results of the 1943 survey on the Warm Springs Indian Reservation-- Ponderosa pine timber killed by insects on 320 acre check plots.

Check Plot				1942 Losses				1943 Losses							
		Ponderosa Pine:			Gross Volume (Bd. Ft.)			Marked in 1943			Estimated Total Losses				
Name and Location	No:	Acres:	Volume M.Bd.Ft.:	No. Trees:	Total	Per: Acre:	% of: Stand:	Ratio: to 1941:	Date of 1943 Cruise:	No. Trees:	Vol.: Bd.Ft:	No. Trees:	Gross Volume (Bd. Ft.) Total	Per: Acre:	% of: Stand:	Ratio to 1942
Old Mill T8S, R 10E, Sec. 9 W/2	1:	280	4,573	39	23,190:	83	.51	1.35:	10/13	19	15500:	27	22,000:	78:	.48:	.95
Bear Springs T6S, R 11E, Sec. 19 S/2	5:	320	3,391	87	51,970:	162	1.53	.99:	10/11	30	23110:	43	33,000:	103	.97:	.64
Ryan's Road T9S, R 10E, Sec. 15 E/s	6:	320	2,863	75	38,870:	121	1.36	1.39:	10/12	29	33580:	41	47,000:	146	1.64:	1.21
Miller Flat T9S, R 11E, Sec 8 W/2	7:	310	2,398	109	44,140:	142	1.84	2.42:	10/12	47	23870:	67	33,000:	106	1.38:	.75
Twin Butte T10S, R 10E, Sec. 5 W/2	12:	320	5,805	44	52,140:	163	.90	1.71:	10/9	30	29990:	43	43,000:	134	.74:	.82
Metolius Bench T16S, R 11E, Sec 32 W/2	14:	320	4,839	79	31,640:	99	.65	.99:	10/8	47	24630:	69	35,000:	109	.72:	1.11
Tenino Burn T10S, R 11E, Sec. 4 S/2	20:	300	1,568	83	32,500:	108	2.08	1.39:	10/9	21	9970:	31	14,000:	47	.90:	.43
Total 7 Plots		2170	25,437	516	274,450:	126	1.08	1.54:		223	160650	321	227,000:	104	.89:	.83

Table 2: Estimated gross insect-caused ponderosa pine mortality in 1942
On the Warm Springs Indian Reservation

Year	Ponderosa Pine Type		Trees		Volume (Bd. Ft.)		
	Acreage	Volume (Bd.Ft.)	Total	Per Section	Total	Per Acre	Percent of Stand
1942	325,000	2,126,000,000	56,000	110	25,000,000	77	1.2